

Snow Survey and Water Supply Forecasting

Wise management of existing water resources in the U.S. is essential; however, water management is complex, even under the best circumstances. Supply, demand, and cost are subject to the climate and to numerous economic and social influences, domestic and international.

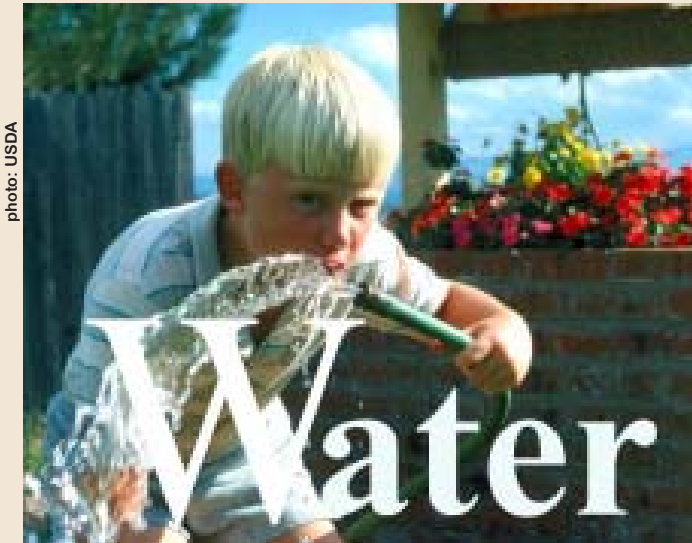


photo: USDA

- The western United States requires a dependable supply of reasonably priced, good quality water if the economy is to prosper and if the quality of life is to remain high.
- Vast areas that receive just a few inches of annual rainfall produce bountiful crops, but only with irrigation.
- Decisions as to the type of crop to plant, the number of acres, and irrigation scheduling all depend upon reliable forecasts of the year's water supply.
- Much of the power for cities as well as for agriculture and industry is generated by hydroelectric energy.

is truly our lifeblood...

Snow Survey Program

The **snow survey program** in Colorado is responsible for collecting snowpack and climatological data using the **SNOTEL (SNOpack TELEmetry)** system. The SNOTEL data is supplemented by data collected manually at snowcourses also located in high mountain watersheds. There are 82 SNOTEL sites in Colorado.

Data Collection

Daily precipitation and snowpack measurements from SNOTEL sites, combined with 110 manual snowcourse measurements, are used to forecast seasonal runoff at 75 stream gauges across Colorado. Forecasts are updated monthly as the winter progresses, allowing water users and resource managers to plan for changing streamflow conditions and water supplies. Water users can access the most recent snowpack data and streamflow forecasts directly from the Colorado NRCS web page.

2002 Summary

Colorado entered a dry period in 1998. In every year since, the state's snowpack has been below average. For many locations across Colorado, 2002 was the driest year on record. The year began with a well below average snowpack.

photo: USDA

Each proceeding month brought a decreased snowpack percentage.

By May 1, the state's snowpack had decreased to only 19% of average.

The below average snowpack, coupled with the drought-like weather patterns, reduced spring and summer streamflows to extremely low volumes statewide. In many basins streamflows were lower than ever recorded in the past. The low runoff coupled with high water demands increased the pressure on the state's reservoirs.

By August, the state's reservoir storage had decreased to only 52% of average.

Fall brought a short reprieve to the dry conditions with two months of above average precipitation. Moisture during September and October increased the optimism that the end of the drought may be in site. As the state entered winter, however, snowpack percentages began a steady decrease across the state.

Snowpack percentages went from well above average in November to 85% of average by year's end.